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IV. *An Account of the Mosses in Scotland. In a Letter from the Right Honourable George Earl of Cromertie, &c. Fellow of the Royal Society, to Dr. Hans Sloane, R. S. Secr.*

November 15. 1710.

S I R,

WHEN we were speaking lately of the Oak and Firr Trees, which are found under Ground, in many Places of *Britain*, but more frequently in the Northern Parts; you was pleased to take notice of some things, which I told you, relating to this Subject: And in order to farther Observation, I thought you might have wish'd them to be put in Writing; and here you have them.

There are many Grounds in *Scotland*, which we call Mosses; from whence the Country-People dig Turf, and Peats. The Surface is covered with a heathy, and, (as they call it) a heathery Scurf: And under that Scurf, there is a black, moist, spongy Earth; in some Places shallower, and in other some deeper; from three, or four, to seven, or eight Foot deep: And in some Places, but not in many, to twice, or thrice that depth. They cut the Heathy Scurf, with a flat kind of Spade, which they force Horizontally, betwixt the Scurf and the foresaid spongy Earth; and so turn up the Scurf in flat thin Flakes, which they call Turffs. It is readily overrun'd with the small Roots of Heath, or Heather; and when dried, makes a healthy brisk Fire; but with much Ashes, of a whitish, duskish, or reddish Colour; always the whiter, as it contains the more of the woody Roots.

The

The black spongy Earth, which is under the Turf, they cut out in oblong Squares, with Iron-Spades made of that Shape, about 8 or 9 Inches long, and about 4 or 5 Inches broad: And as the Men cut them up, the weaker Men, Women and Children, carry them in small Wheel-barrow, scattering them on some dry Ground, to be dried by Sun and Wind: Some become harder, some softer, according to the Nature of the Mould, or Earth; the more solid, the better Fire; and they are less esteemed, which are more spongy. And when they have cut off one Surface, of four, or five Inches deep, they proceed downward to another; until at last, they come to the hard Channel, unless they be stopped by Water; which also they ordinarily remove by making a Channel to some Descent, if they can; and if they cannot, there the Water stagnates.

And in such wasted Pits, where Water hinders to cut the spongy Earth to the bottom; The Pits will be filled up again, in a good number of Years, with new Ground, of spongy Earth; which in progress of Time, will come to the Consistence of Peat-Moss, as at first, and a Scurfy Heath Turf will at last grow on the Top of it.

I have observ'd, That Peat-Pits, which have been digged, since I remember, to have grown up again with new Peats; and that sometimes oftner than once, in the same Pits; some Mosses growing in shorter time than others. But I have observ'd also, That when they dig the Peats to the Channel, and in Places where the Water runs off, and doth not stagnate, that the Mosses did not grow, nor renew there again. Which moved me to order my Tenants, not to cut the Mosses to the Channel, nor in very large Openings; but rather in smaller Pits, that they may grow again more hastily: And the Event hath answer'd my Design. But within these few Days, speaking with Sir Robert Adaire, (a most Ingenious Gentleman)

leman) he told me, That without cutting the Mosses, in the Method of Pits; but by cutting in fully to the Channel, and by laying the heathy Turf, which is cut off the Top of the Moss; he said, by laying it on the Channel, so as to cover the Channel over, that in progress of Time a Moss would grow there again; but not so hastily as in the Pits.

I never observed any of these Mosses, which did not stand on Plains: Albeit the heathy, or heathry Turf, do over-spread the Faces and Declivities of the *Scots* Mountains, for the most part; there are many Mosses, which stand very high on these Hills; yea sometimes not very far from the Top. But the Peat Mosses are always in a Plain, tho' there be Descents to them, and Descents from them; yet I never observed them to stand on such a Plain, as the Water might stagnate on: And they always have a Descent to them, from some higher Grounds, whereby Water did descend to that Plain; which I take to be the Parent of Peat. Thus much of the Mosses in general.

In many of these Mosses, there is found quantities of Firr and Oak Wood; for, as I said, I never observed nor heard of other Woods in them. These are ordinarily found in whole Trees; but the smaller Branches are seldom found unconsumed. I have seen very many, and very great Trees of both kinds: But generally speaking, the Oak is always black; the Firr sometimes whiter, sometimes redder, as is observ'd in all Firr Woods: But neither Firr nor Oak, are found with any Bark upon them. The Firr is generally as fresh and tuff, and as fit for any Use, as any other old Wood is: Only the Wood of these found in Mosses, has so imbibed the Water, that it takes a long time to dry, and fit it for Use, especially the Oak; insomuch, that when it is put into any small Work, it readily warps and changes its Figure. We never find any of the

the Oaks standing in the Woods, have that Blackness ; so that, I presume, the Blackness accrues from the Water.

There are many Places, where Woods do not now grow ; albeit, People endeavour to Cultivate them ; and yet the Mosses in these Places are well stored with this kind of under-ground Timber, both Oak and Firr, but especially Firr ; such are *Orkney*, the *Lewes* (which are Isles,) *Cathness*, *Tarbartness*, and the Coast of *Buchan*. But yet it would appear, that there have been Woods of Old in these Places, or how else could they come to these Mosses : And for a farther Proof of this Inference, be pleased to take Notice of the following Account, which gave occasion to this Letter.

In the Year 1651. I being then about 19 Years Old, and occasionally in the Parish of *Lochbrun*, passing from a Place called *Achadiscald*, to *Gonnazd*, I went by a very high Hill, which did rise in a constant steepness from the Sea ; only in less than half a Mile up from the Sea, there is a Plain about half a Mile round ; and from thence the Hill rises in a constant steepness, for more than a Mile in Ascent. This little Plain was at that time all covered over with a firm standing Wood ; which was so very Old, that not only the Trees had no green Leaves, but the Bark was totally thrown off ; which the Old Countrymen, who were in my Company, told me, was the universal manner in which Firr Woods did terminate ; and that in 20, or 30 Years after, the Trees would ordinarily cast themselves up from the Root ; and that they would lie in heaps, till the People would cut them, and carry them away. They likewise did let me see, that the outside of these standing white Trees, and for the space of one Inch inward, was dead white Timber ; but what was within that, was good solid Timber, even to the very Pith, and as full of Rozin as it could stand in the Wood.

Some

Some Fifteen Years, after, or thereabouts, I had occasion to come the same way ; and call'd to mind the Old Woods which I had seen. Then there was not so much as a Tree, or appearance of the Root of any ; but in place thereof, the whole Bounds, where the Wood had stood, was all over a plain green ground, covered with a plain green Moss. I asked the Country-People, who were with me, what became of the Wood, and who carried it away ? They told me, no body was at the Pains to carry it away ; but that it being all overturn'd from the Roots by Winds, the Trees did lie so thick and swarving over one another, that the green Moss (there, in the *British* Language called Fog) had over-grown the whole Timber ; which, they said, was occasion'd by the moisture that came down from the high Hill, which was above it, and did stagnate upon that Plain ; and they said none could pass over it, because the Scurf of the Fog would not support them. I would needs try it ; and accordingly I fell in to the Arm-Pits, but was immediately pull'd up by them. Before the Year 1699. that whole Piece of Ground was turn'd into a common Moss ; where the Country-People are digging Turf and Peats, and continue so to do. The Peats as yet are not of the best, and are soft and spongy, but grow better and better ; and as I am inform'd, it does now afford good Peats.

This Matter of Fact, did discover the Generation of Mosses ; and whence it is, that many Mosses are furnish'd with such Timber.

These Highland Woods are ordinarily stored with other kind of Timber, as Birch, Alder, Ash, besides Shrubs, and Thorns ; yet we never find any of those Woods remaining in the Mosses.

What the Reason may be, That the Firr and Oak do not now grow in several Countries, where they are found so plentifully in the Mosses, *Inquirendum est.*

Whilst

Whilst I speak of Mosses, allow me to add this, which seems to me notable, (*viz.*) That in a Moss near the Town of *Elgin* in *Murray*, tho' there be no River or Water that runs into the Moss, yet three or four Feet in the Moss, there is a sort of little Shell-Fish resembling Oysters, found numerously in the very body of the Peats, and the Fish alive within them; tho' no such Fish be found in any Water near to that Moss, nor in any adjacent River; no, nor in the stagnating Pits, that are in that Moss; but only in the very substance of the Turf: Some of which were sent to me from the place, a little before I came from *Scotland*. Sir, your own command will excuse this trouble given by

Your most humble Servant,

CROMERTIE.